

**APPENDIX B**

**STATEMENT OF WORK**

**FOR THE REMEDIAL DESIGN AND REMEDIAL ACTION**

**Soil and NAPL Operable Unit (OU 1)**

**DEL AMO FACILITY SUPERFUND SITE**

**City of Los Angeles, County of Los Angeles, State of California**

**EPA Region 9**

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## I. PURPOSE OF THE SOW

This Statement of Work (SOW) sets forth the tasks and requirements to be undertaken by the Settling Defendant (SD), in compliance with the Consent Decree (CD), for implementing the remedial design (RD) and remedial action (RA) for Operable Unit 1 (OU1) at the Del Amo Facility Superfund Site (Site) as set forth in the OU1 Record of Decision (ROD).

## II. DEFINITIONS

Unless otherwise expressly provided in the SOW, the terms used in the SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the CD, shall have the meanings assigned to them in CERCLA, in such regulations, or in the CD. Whenever terms listed below are used in the SOW or in any appendix attached hereto, the following definitions shall apply:

“Paragraph” shall mean a paragraph of the SOW, unless otherwise stated.

“RPM” shall mean the EPA remedial project manager, or other representative designated by EPA.

“Section” shall mean a Section of the SOW, unless otherwise stated.

“Approval by EPA” and “as determined by EPA” shall mean that EPA has also notified DTSC and given them the opportunity to comment.

## III. DESCRIPTION OF THE REMEDIAL ACTION AND REQUIREMENTS

The Work to be performed under this SOW has been developed based on the selected remedy for the Del Amo Superfund Site OU1. A full description of the selected remedy is presented in the ROD (*“Record of Decision, Del Amo Facility Superfund Site, Soil and NAPL Operable Unit, Los Angeles, CA”* September 30, 2011), as supplemented by the Memo to File, dated July 26, 2013. The Work associated with the selected remedy is outlined below and described in detail thereafter. This Work shall be implemented as part of this SOW.

The Performance Standards include the ARARs, clean-up goals, clean-up standards, standards of control, quality assurance/quality control criteria and other substantive requirements, criteria or limitations set forth below, as based on the ROD, and/or contained in any approved deliverable.

The ROD states (p. 137): “If new analytical data for one or more of the identified areas demonstrate that the described clean-up goal has been met prior to implementation of the remedy through natural attenuation or other mechanisms, the intent of this ROD will have been met and active remediation will not be required.”

The primary components of the Work are:

- A. Institutional Controls (ICs)
  - 1. Informational Outreach
  - 2. Building Permit Review
  - 3. General Plan Footnote
  - 4. Restrictive Covenants
  - 5. Groundwater Covenants
- B. Capping for VOC and Non-VOC impacted Shallow Outdoor Soil
- C. Building Engineering Controls (BECs) for VOC-Impacted Shallow Soil Under a Building
- D. SVE for VOC-impacted Outdoor Shallow Soil
- E. SVE for VOC-impacted Soil Under a Building
- F. SVE for Vadose Zone Soil in a NAPL-Impacted Groundwater Contamination Source Area
- G. ISCO and SVE for Deep Soil and Groundwater in NAPL-impacted Groundwater Contamination Source Areas
- H. Excavation, BECs, Capping, and/or SVE for Areas of Site-Related Contamination Encountered During Future Redevelopment or Construction

A detailed description of the Work that SD is required to implement pursuant to the CD and this SOW is as follows:

- A. Institutional Controls - The Institutional Controls (ICs) to be implemented during RA consist of the following five (5) components of work and will be further defined in the Institutional Control Implementation and Assurance Plan (ICIAP) that will be developed as part of RD activities: informational outreach, building permit review,

General Plan footnote, restrictive covenants, and groundwater covenants. Performance standards for these components are described below.

1. IC Layer 1 - Informational Outreach includes the use of informative mailings, websites, publicly accessible databases and any other venue as determined by EPA that can provide information to property users. The outreach will be accomplished during implementation of RD and RA.
  - a) Informational outreach shall be applied to all properties in OU1. The targeted audience includes owners, tenants, prospective owners and tenants, developers and other entities supporting them.
  - b) SD shall make environmental information about the properties available to the targeted audience, including data from the remedial investigation and information from the Baseline Risk Assessment and ROD and any other relevant information, as determined by EPA, and shall maintain such information in a database publicly accessible through the internet.
  - c) The ICIAP, required under Section V(D), shall include a plan and schedule for preparing the outreach material to be used in the outreach tools (mailings, websites, publicly accessible databases, and any other venue proposed by SD or directed by EPA) and implementing the outreach tools. The ICIAP is subject to review and approval by EPA pursuant to Section XI of the CD.
  - d) SD shall, in the ICIAP, specify a frequency for sending the mailings and updating ownership and tenant contact information.
  - e) SD shall, in the ICIAP, describe the website infrastructure, including, but not limited to, host server – in house or outsource, utilization of, integration with, or links to existing site websites, as well as a plan and schedule for website design appearance and any other relevant descriptive feature.
  - f) SD shall, in the ICIAP, specify the publicly accessible databases that will be used to house site information, and describe the process required to place OU1 property information in those databases.
  - g) SD shall, in the ICIAP, specify any other outreach venue it proposes to use, and submit a plan and schedule for utilizing those tools.
  - h) SD shall implement, monitor and update IC Layer 1, as defined in the ICIAP, in perpetuity. SD may propose, at any time during operation and maintenance (O&M), for EPA approval, to alter or remove the IC Layer 1 activities. SD shall, in the ICIAP, specify the methods, frequency,

and duration that will be used to monitor the tools implemented in this component of work. The frequency shall be annually, unless SD proposes and EPA approves otherwise.

2. IC Layer 2 - Building Permit Review

a) SD shall continue implementing the Building Permit Review process at all OU1 properties as defined in the June 27, 2007 Work Plan Supplement to the AOC, Docket No. 92-13 (Work Plan Supplement) during RD and RA. SD shall include in the ICIAP all the steps required to implement the Permit Review IC, which shall include at a minimum the steps included in the Work Plan Supplement. SD shall continue implementing its role in the Del Amo Environmental Review Team (ERT) as specified in the Work Plan Supplement. This includes conducting initial meetings/teleconferences with applicants upon being notified or otherwise becoming aware of a planned project; reviewing applicants' project and existing environmental information; preparing a Screening Evaluation Summary Report (SESR, as defined in the Work Plan Supplement) including, among other things, a recommendation for follow-up action (if any); conducting any follow-up actions; and submitting results from any follow-up actions. The Building Permit Review IC, including the Pre-screening step and the Supplemental Environmental Review Process and the SESR, are further defined in the Work Plan Supplement.

b) SD shall monitor underground service alerts for notifications of intent to perform subsurface work at the Site. Upon notification SD shall contact the applicant and conduct the pre-screening step of the Building Permit Review IC.

c) SD shall continue to perform all building permit review IC actions in perpetuity. SD may propose, at any time during O&M for that parcel, for EPA approval, to alter or remove the IC Layer 2 activities. SD shall, in the ICIAP, specify the methods, frequency, and duration that will be used to monitor the tools implemented in this component of work. The frequency shall be annually, unless SD proposes and EPA approves otherwise.

3. IC Layer 3 - General Plan Footnote - SD shall work with local government entities to prepare a General Plan footnote (the footnote) for 26 properties in OU1, specifically Areas 2, 4-17, 19, 20, 22-24, 28, 30, 32, 33, 35, and 36, for approval and implementation by local government entities during RA. The footnote will state that the land is within the Del Amo Superfund Site and is not appropriate for residential use.

a) SD shall, in the ICIAP, submit a plan and schedule for preparing the General Plan footnote and pursuing the necessary process to add it to the Los Angeles General Plan. This will entail working with the City of LA Planning Department, Planning Commission, and City Council to amend the General Plan.

b) The plan in the ICIAP must include, but not be limited to, submission of a draft General Plan footnote for EPA review and approval prior to submission to the Planning Department or Commission.

c) In the implementation of the plan in the ICIAP, SD shall directly contact and work with the Planning Department, Planning Commission and City Council. This work shall include, at a minimum, preparing and submitting any required documents and applications pursuant to the City's standard processes, including paying any associated fees, as well as providing any additional information and other assistance as necessary. EPA will provide direct support and involvement with the City as necessary, but primary responsibility shall lie with the SD.

d) If the City approves and implements the footnote, SD shall monitor IC Layer 3 in perpetuity. SD may propose, at any time during O&M, for EPA approval, to alter or remove the IC Layer 3. SD shall, in the ICIAP, present a plan and schedule for periodically monitoring the General Plan after implementation of the General Plan footnote to verify that the footnote remains in place and that zoning is not changed to residential or any other sensitive use (e.g. hospital or daycare) for any parcel within the 26 parcels noted above. The frequency of such monitoring shall be annually, unless SD proposes and EPA approves otherwise. If SD learns that any of the parcels included within these 26 properties are proposed to have their use changed to residential or any other sensitive use, SD shall notify EPA and DTSC of such proposal within 3 business days of acquiring such knowledge.

4. IC Layer 4 - Restrictive Covenants shall be implemented on Areas 2, 4-17, 19, 20, 22-24, 28, 30, 32, 33, 35, and 36. The restrictive covenants should be in substantially the same form as Appendix D of the CD and shall meet the requirements of the ROD.

a) SD shall, in the ICIAP, submit a plan and schedule to secure filing of the covenants during RA, including preparing the draft restrictive covenants, conducting a title search, preparing current title insurance commitments (if necessary), obtaining release or subordination of prior liens and encumbrances (if necessary, pursuant to Section 4.d), negotiating covenants with property owners, arranging for execution of

the covenants, updating the title searches, recording the covenants, and providing the final documentation to EPA. SD shall implement the plan.

b) The draft restrictive covenants shall be submitted to EPA and DTSC for review and approval.

c) SD shall monitor IC Layer 4 in perpetuity. SD may propose, at any time during RA, for EPA approval, to alter or remove the IC Layer 4 activities. Note that provisions of the covenant will dictate further requirements for its alteration or removal. SD shall, in the ICIAP, specify the methods, frequency, and duration that will be used to monitor the restrictive covenants implemented in this component of work. The frequency shall be annually, unless SD proposes and EPA approves otherwise. SD

d) For each property subject to this section, SD shall review all prior liens and encumbrances shown on the title search and evaluate their impact on remedy implementation and enforcement of the restrictive covenants. SD shall propose release or subordination of those liens and encumbrances that may impact remedy implementation or enforcement of the covenants, or propose notice to the holders of such liens and encumbrances. Upon EPA approval of SD's review and proposals, SD shall obtain such releases or subordination agreements, or issue such notices.

5. IC Layer 5 - Groundwater Covenants shall be implemented on Areas 4, 5, 6, 8, 9, 11, 15, 16, 17, 19, 20, 22, 23, 24, 28, 32, 33, and 35. This covenant shall meet the requirements of the ROD, including prohibiting drilling into and use of groundwater without prior approval of EPA and DTSC.

a) SD shall, in the ICIAP, submit a plan and schedule to secure filing of the groundwater covenants during RA, including preparing the draft covenants, negotiating covenants with groundwater rights owners, arranging for execution of the covenants, recording the covenants if applicable, and providing the final documentation to EPA.

b) The draft groundwater covenants shall be submitted to EPA and DTSC for review and approval.

c) SD shall monitor IC Layer 5 in perpetuity. SD may propose, at any time during RA, for EPA approval, to alter or remove the IC Layer 5 activities. Note that provisions of the covenant will dictate further requirements for its alteration or removal. SD shall, in the ICIAP, specify the methods, frequency, and duration that will be used to monitor the

covenants implemented in this component of work. The frequency shall be annually, unless SD proposes and EPA approves otherwise.

**B. Capping for VOC- and Non-VOC-impacted Shallow Outdoor Soil**

Caps currently exist at each of the four areas identified for capping in the form of asphalt or concrete covered streets, parking lots, or storage areas. These existing caps will be evaluated during remedial design to determine whether they are sufficient to meet the remedial objective. Capping does not remove or treat soil, so there is no quantitative soil clean-up level.

a) SD shall design and construct (if not already present with acceptable integrity) caps on areas of properties 2, 16, 28, and 35 where non-VOCs, and in some cases VOCs, are present above the action level, as described in the ROD.

b) SD shall assess if existing data is sufficient for RD needs, subject to EPA approval. If not, SD shall include such sampling in the Pre-Design Investigation Work Plan and conduct sample collection and data/risk evaluation activities to determine the capping footprints (with EPA approval). SD will then perform an initial visual inspection of the pre-remediation surface of each capping location and propose whether the existing surface meets the capping requirement (with criteria defined in the Pre-Design Investigation Work Plan). If cracks, holes, or other forms of disrepair are observed that would not allow the existing surface to meet the capping requirements, SD shall submit a design plan for and perform repairs, enhancements, or replacements of existing surfaces (e.g., slurry sealing, repaving, etc.).

SD shall propose, in the Performance Monitoring and Evaluation Plan (PMEP), how the Performance Standards will be measured, and propose a schedule and protocol for monitoring and inspecting the caps (which may include proposing discontinuation of a cap at some point in the future). SD shall, in the draft O&M Plan described in Section V(I), propose a schedule and protocol for repairing and replacing the caps. SD shall perform the periodic monitoring, inspections, maintenance, repairs, and replacements.

**C. Building Engineering Controls (BECs) for VOC-Impacted Shallow Soil under a Building**

a) During RD, SD shall assess if existing site data is sufficient for RD needs, subject to EPA approval. If not, SD shall include such sampling in the Pre-Design Investigation Work Plan and conduct sample collection and data/risk evaluation activities including, but not limited to, indoor air

and outdoor air background concentrations of COCs in accordance with the ROD.

b) If evaluation of the data indicates that COC concentrations attributable to sub-slab VOC impacted shallow soil clearly exceed the action levels identified in the ROD, SD shall implement BECs. In the Pre-Design Investigation Report, SD shall propose locations for the BEC components.

c) If the action levels identified in the ROD are not clearly exceeded, SD shall prepare and submit a plan (included as part of the Pre-Design Investigation Work Plan) to perform periodic monitoring to ascertain whether COC action levels are exceeded. Upon completion of periodic monitoring, if ROD action levels have not been clearly exceeded, BECs will not be required and a Treatment Area-Specific Remedial Action Report will be prepared. SD shall propose, in the PMEP, a schedule, duration, and protocol for monitoring.

d) If EPA determines that building engineering controls are necessary, SD shall first modify the existing building ventilation system. If that measure alone is insufficient to achieve the clean-up goals, then SD shall seal the floors as well. These measures shall be accompanied by periodic monitoring for the same parameters as the periodic monitoring. SD shall propose, in the PMEP, the schedule, duration, and protocol for monitoring.

e) SD shall implement, maintain, and monitor, as needed, the BECs pursuant to the EPA-approved BEC design plan and the PMEP. If the ventilation modifications and/or floor sealing are insufficient to achieve indoor air clean-up goals, SD shall implement sub-slab venting. Sub-slab venting shall include evaluation of the need to treat and extract vapors to achieve air emission ARARs. SD shall treat and extract vapors as necessary to achieve ARARs. Sub-slab venting shall include periodic monitoring to allow for assessment of achieving the clean-up goals identified in the ROD. SD shall propose, in the PMEP, the schedule, duration, and protocol for monitoring these parameters.

D. SVE for VOC-impacted Outdoor Shallow Soil

a) SD shall design, construct, and operate a soil vapor extraction (SVE) system at properties numbered 6, 11, and 23 until the clean-up goals presented in Table 12-16.1 of the ROD are achieved, if they are not already achieved (based on assessment defined in paragraph b). The system shall address areas where volatile organic compounds (VOCs) are present above action levels specified in Section 12.2.4 of the ROD.

b) SD shall assess if existing site data is sufficient for RD needs, subject to EPA approval. If not, SD shall include such sampling in the Pre-Design Investigation Work Plan and conduct sample collection and data/risk evaluation activities to determine the need for and extent of the outdoor shallow soil requiring remediation, the soil characteristics, or any other parameter needed for design purposes, as approved by EPA. SD shall conduct the additional sampling in accordance with EPA-approved sampling plans. SD shall conduct the testing described above in accordance with Section V(C) below. In the Pre-Design Investigation Report, SD shall propose the extent of the treatment system.

c) If data gathered during the Pre-Design Investigation (which at least covers the area that previously exceeded action levels) show that levels of contamination no longer exceed action levels, no action will be needed for the area. If data gathered during the Pre-Design Investigation exceed action levels, SD shall prepare a Pilot Study Work Plan and conduct a pilot study as part of the preliminary stage of the RD. SD shall conduct the study described above in accordance with Section V(C) below.

d) SD shall, during the preliminary stage of the RD, evaluate a range of options for the vapor treatment component of the system and present this evaluation to EPA for review and approval. The range of options shall include, at a minimum, thermal oxidizers, vapor phase carbon adsorbers, condensers, and internal combustion engines. SD shall implement the vapor treatment technology approved by EPA during RD. EPA shall consider factors including, but not limited to, cost, effectiveness, implementability, and public acceptance.

e) SD shall include in the RD and RA reasonable efforts to minimize impacts on the property owners and tenants at these properties. Such measures shall include such things as placing piping below grade and siting aboveground treatment equipment in a location convenient for the commercial occupant, where practicable.

f) SD shall propose, in the PMEP described in Section VI(E), the methods required for monitoring system performance, including process monitoring, progress of the remediation, and the attainment of the clean-up goal. The decision to permanently shut down the SVE system will be based on achieving the clean-up goals in Section 12.4.2(4) of the ROD (as measured according to the PMEP).

g) SD shall evaluate use of flush-mounted, traffic-rated well boxes to minimize impedance to vehicular traffic at the operating facilities, where

appropriate. Well boxes shall also be secured to prevent unauthorized access.

E. SVE for VOC-impacted Soil under a Building

a) SD shall design, construct, and operate an SVE system to address VOCs beneath the south end of the building on property number 23 (19899 Pacific Gateway Drive). The system shall address areas where VOCs are present above action levels specified in Section 12.2.5 of the ROD (based on assessment defined in paragraph b).

b) SD shall assess if existing data is sufficient for RD needs, subject to EPA approval. If not, SD shall include such sampling in the Pre-Design Investigation Work Plan and conduct sample collection and data/risk evaluation activities to determine the extent of shallow soil under the building, if any, requiring remediation, and the soil characteristics, or any other parameter needed for design purposes. In the Pre-Design Investigation Report, SD shall evaluate sub-slab sources and identify the extent of the treatment system, subject to EPA approval. SD shall conduct testing described above in accordance with Section V(C) below.

c) If data gathered during the Pre-Design Investigation (which at least covers the area that previously exceeded action levels) show that levels of contamination no longer exceed action levels, no action will be needed for the area. If data gathered during the Pre-Design Investigation exceed action levels, SD shall prepare a Pilot Study Work Plan for EPA approval and conduct a pilot study as part of the preliminary stage of the RD.

SD shall conduct the testing described above in accordance with Section V(C) below.

d) SD shall implement and operate the SVE system until the clean-up goals (as measured according to the PMEP) in Section 12.4.2(5) of the ROD are met.

e) SD shall, during the preliminary stage of the RD, evaluate a range of options for the vapor treatment component of the system and present this evaluation to EPA for review and approval. The range of options shall include, at a minimum, thermal oxidizers, vapor phase carbon adsorbers, condensers, and internal combustion engines. SD shall implement the vapor treatment technology approved by EPA during RD. EPA shall consider factors including, but not limited to, cost, effectiveness, implementability, and public acceptance.

f) SD shall design sub-slab probes in a manner to minimize damage to the interior of the structure. If damage occurs as a result of SD's work, SD shall be responsible for the repairs and associated costs.

g) SD shall include in the RD and RA reasonable efforts to minimize the impact on the property owners and tenants at this property. Such measures shall include such things as placing piping below grade and siting above ground treatment equipment in a location convenient for the commercial occupant, where practicable.

h) SD shall propose, in the PMEP described in Section VI(E), the methods required for monitoring system performance including process monitoring, progress of the remediation, and the attainment of the clean-up goal.

i) The SD shall evaluate use of flush-mounted, traffic-rated well boxes to minimize impedance to vehicular traffic at the operating facilities, and implement where appropriate. Well boxes shall also be secured to prevent unauthorized access.

F. SVE for Deep Vadose Zone Soil in a NAPL-Impacted Groundwater Contamination Source Area

a) SD shall design, construct, and operate an SVE system in SA-6 located on property number 23 until the clean-up goals specified in ROD Section 12.4.2.6 are achieved (based on assessment methods described in the PMEP).

b) SD shall assess if existing data is sufficient for RD needs, subject to EPA approval. If not, SD shall include such sampling in the Pre-Design Investigation Work Plan and conduct sample collection and data evaluation activities to help define the design basis and establish the areal and vertical extent of NAPL-impacted soil requiring remediation, subject to EPA approval. SD shall conduct the additional sampling in accordance with the EPA-approved sampling plans. SD shall conduct the testing described above in accordance with Section V(C) below and present the findings, design basis, and extent of remediation in the Pre-Design Investigation Report.

c) SD shall prepare a Pilot Study Work Plan for EPA approval, and conduct a pilot study as part of the preliminary stage of RD. SD shall conduct the study described above in accordance with Section V(C) below.

d) SD shall, during the preliminary stage of the RD, evaluate a range of options for the vapor treatment component of the system and present

this evaluation to EPA for review and approval. The range of options shall include, at a minimum, thermal oxidizers, vapor phase carbon adsorbers, condensers, and internal combustion engines. SD shall implement the vapor treatment technology approved by EPA during RD. EPA shall consider factors including, but not limited to, cost, effectiveness, implementability, and public acceptance.

e) SD shall include in the RD and RA reasonable efforts to minimize the impact on the property owners and tenants at this property. Such measures shall include placing piping below grade and siting aboveground treatment equipment in a location convenient for the commercial occupant, where practicable.

f) SD shall propose, in the PMEP described in Section VI(E), the methods required for monitoring system performance including process monitoring, progress of the remediation, and the attainment of the clean-up goal.

g) SD shall evaluate use of flush-mounted, traffic-rated well boxes to minimize impedance to vehicular traffic at the operating facilities, where appropriate. Well boxes shall also be secured to prevent unauthorized access.

G. ISCO and SVE for Deep Soil and Groundwater in NAPL-impacted Groundwater Contamination Source Areas

a) SD shall design, construct, and operate an in-situ chemical oxidation (ISCO) and SVE system at NAPL Source Areas SA-3, SA-11, and SA-12 until the clean-up goals specified in ROD Sections 12.4.2.6 and 12.4.2.7 are achieved.

b) SD shall assess if existing data is sufficient for RD needs, subject to EPA approval. If not, SD shall include such sampling in the Pre-Design Investigation Work Plan and conduct sample collection and data evaluation activities to help refine the extent of VOC NAPL contamination requiring remediation and complete the RD for this element of work. SD shall conduct the additional sampling in accordance with the EPA-approved sampling plans. SD shall conduct the testing described above in accordance with Section V(C) below, and present the results, design basis, oxidant, and extent of remediation in the Pre-Design Investigation Report.

c) SD shall prepare Bench/Pilot Study Work Plan(s) and conduct bench/pilot study(ies) as part of the preliminary stage of RD. The results of the Bench Study Report(s) shall help define the parameters to be used

in the pilot study(ies) and remedial design(s), including recommending the most appropriate oxidant. SD shall conduct the study(ies) described above in accordance with Section V(C) below.

d) SD shall, during the preliminary stage of the RD, evaluate a range of options for the vapor treatment component of the system and present this evaluation to EPA for review and approval. The range of options shall include, at a minimum, thermal oxidizers, vapor phase carbon adsorbers, condensers, and internal combustion engines. SD shall implement the vapor treatment technology approved by EPA during RD. EPA shall consider factors including, but not limited to, cost, effectiveness, implementability, and public acceptance.

e) SD shall propose, in the PMEP described in Section VI(E), the methods required for monitoring system performance and achievements, including process monitoring, progress of the remediation, plume stability, compliance with ARARs, and the attainment of the clean-up goal.

f) After SD performs the pilot study(ies), SD shall expand the system into a phased implementation of the RA, subject to EPA approval. The results of the previous phases will guide the subsequent phases.

g) SD shall include in the RD and RA reasonable efforts to minimize the impact on the property owners and tenants at this property, including placing piping below grade and siting the aboveground treatment equipment in a location convenient for the commercial occupant, where practicable.

h) SD shall evaluate use of flush-mounted, traffic-rated well boxes to minimize impedance to vehicular traffic at the operating facilities, where appropriate. Well boxes shall also be secured to prevent unauthorized access.

H. Excavation, BECs, Capping, and/or SVE for Future Areas of Contamination Encountered During Redevelopment or Construction

a) If, during the course of construction or redevelopment of properties within OU1, additional contamination consistent with the former rubber plant and related operations is found in the shallow soil (less than 15 feet bgs) exceeding action levels identified in the ROD, SD shall implement remedial action, focused on the protection of both the construction workers and a commercial-use scenario, as described below.

b) The method for addressing such contamination shall consist of excavation and off-site disposal, with the following exceptions:

- (1) If VOC contamination exceeding action levels underlies a structure such that excavation is impractical, as determined by EPA, then SD shall implement BECs in the same manner as in Section II.C.
- (2) If excavation is impractical because of interference with structures or infrastructure, as determined by EPA, then SD shall implement SVE (for VOCs) and/or capping (for non-VOCs) in the same manner as in Section II.B. or II.E., respectively.
- c) SD shall create a generic excavation work plan pursuant to Section VI, Part A(3) of this SOW. In the event that remediation will alternatively be implemented through capping, BECs, or SVE, SD will prepare a work plan for review and approval by EPA prior to implementation.
- d) Upon attaining clean-up goals in each remedial action area, SD shall prepare technical memoranda pursuant to Section VI Part A(3), to document the action.
- e) If COCs are left in place above a level that would not allow for unrestricted use, and a restrictive covenant is not already in place, then SD shall make best efforts to negotiate and implement a restrictive covenant with property owner(s) at that location.

#### IV. GENERAL REQUIREMENTS

- A. All deliverables required pursuant to this SOW are subject to review and approval by EPA pursuant to Section XI of the CD.
- B. Progress Reports. SD shall prepare progress reports, as specified in paragraph 28 of the Consent Decree, and submit them to EPA and the State. The reporting requirements may be modified in the future, with EPA approval, as specified in paragraph 28 of the Consent Decree.
- C. SD shall install barriers to prevent unauthorized access to any active remediation work area, during and after work hours.
- D. Best Efforts Green Remediation - SD shall include reasonable and appropriate efforts to reduce short-term impacts of clean-up beyond minimum legal requirements, such as, but not limited to: use of rail transport rather than trucking, use of alternative fuels (e.g. biodiesel with ultra-low sulfur diesel for off road and on road vehicles), idle reduction, use of equipment retrofitted with emissions controls (e.g., diesel oxidation catalyst, diesel multistage filter, or diesel particulate filter). Other examples include waste recycling, purchasing materials with post-consumer recycled content, and water usage reduction. Information and resources are available through Smart Energy Resources Guide (SERG) and Green Remediation: Incorporating Sustainable

Environmental Practices into Remediation of Contaminated Sites. Sustainability can also be considered during RD in the evaluation and selection of technologies.

V. REMEDIAL DESIGN

SD shall perform the tasks set forth below. SD shall design the RA to ensure that it meets all objectives and Performance Standards of the ROD, the CD, and this SOW.

A. **Remedial Design Work Plan** - SD shall submit a RD Work Plan within 90 days after EPA issues an authorization to proceed pursuant to Paragraph 9 (Selection of the Supervising Contractor) of the CD. Subject to EPA's approval, the RD may be divided into parts or phases and SD may develop separate deliverables for each part or phase of work. The RD Work Plan shall:

1. Include plans and schedules for implementation of all RD activities and any pre-design tasks identified as part of this SOW. Pre-design activities are anticipated to be performed, where appropriate, and may include assessment(s)/investigation(s), bench/pilot study(ies), and the development of system performance goals (including the use of decision diagrams, etc. to assess achievement of the Performance Standards);
2. Document the overall management strategy for performing pre-design/assessment investigations and RD, and present a general approach to construction, operation, maintenance, and monitoring of the RA as necessary to implement the selected remedy;
3. Include a Design/Construction Approach, in which SD shall detail whether SD is interested in pursuing a conventional design/bid/build strategy, or the design/build approach, to design and construction. The conventional design/bid/build approach is one in which the design is taken to the 100 percent completion level to allow contractor bidding of the construction work. The design/build approach is one in which the design is developed to about the 95 percent completion level followed by subsequent field engineering during construction. EPA will indicate approval of the approach as part of RD Work Plan approval;
4. Document the responsibility and authority of all organizations and key personnel involved with the development of the RD;
5. Identify any data gaps, including whether existing data is sufficient for RD needs. Include the approach to be used to address those data gaps;
6. Provide sample design sheets and proposed templates to be used in the design (e.g. , drawing template, spec template, basis of design template, format for data management systems and coordinate systems, etc. );

7. Describe the proposed design quality assurance approach (e.g., peer review, etc.);
8. Describe how the RD and the RA will follow EPA's Superfund Green Remediation Strategy and Sustainability principles to ensure that the entire project incorporates options to minimize the environmental footprints of the clean-up action;
9. Address permitting, ARARs and any other regulatory issues;
10. Provide a process and schedule for compliance during RD and RA with any requirements that necessitate coordination with other entities (e.g., property owners, state agencies, local agencies, etc.), such as access, permitting, property rights acquisition, property leases, easements and/or licenses required for implementation of the RD and RA;
11. Provide a schedule for completion of the RA Work Plan; and
12. Include a description of, and schedule for, deliverables to be submitted during the RD work. The deliverables shall include:
  - a) Progress Reports;
  - b) Health and Safety Plan/Contingency Plan (HASP/CP);
  - c) Pre-Design Investigation and SVE Pilot Study, ISCO/SVE Bench/Pilot Study Work Plans
  - d) Pre-Design Investigation, SVE Pilot Study and ISCO/SVE Bench/Pilot Study Reports
  - e) Institutional Controls Implementation and Assurance Plan (ICIAP);
  - f) Preliminary Design Report (30%);
  - g) Pre-Final Design Report (95%);
  - h) Final Design Report (100%);
  - i) Draft Operation and Maintenance Plan (O&M Plan); and
  - j) Draft Construction Quality Assurance Project Plan (CQAP).

**B. Health and Safety Plan/Contingency Plan (HASP/CP)**

1. Health and Safety Plan (HASP) - SD shall prepare and submit for EPA review a Health and Safety Plan 30 days after EPA approval of the Final RD Work

Plan. The HASP shall describe all efforts to be made to protect on-site personnel and area residents from physical, chemical and all other hazards posed by SD's work at the Site. The HASP shall follow EPA guidance and all OSHA requirements as outlined in 29 CFR Parts 1910 and 1926. The HASP shall address the following areas:

- a) Facility Description;
- b) Personnel;
- c) Levels of protection;
- d) Safe work practices and safe guards;
- e) Medical surveillance;
- f) Personal and environmental air monitoring;
- g) Personal protective equipment;
- h) Personal hygiene;
- i) Decontamination of persons and equipment;
- j) Site work zones;
- k) Contaminant control;
- l) Logs, reports and record keeping; and
- m) Training and Safety Audits.

2. Contingency Plan (CP) - The HASP shall include a Contingency Plan (CP). The CP shall describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, treatment system failure, slope failure, etc). The CP shall include the following elements, as necessary/applicable:

- a) Name of the person or entity responsible for responding in the event of an emergency incident;
- b) Plan and date(s) for meeting(s) with the local community, including local, State and Federal agencies involved in the clean-up, as well as local emergency squads and hospitals;
- c) First aid medical information;

- d) Air Monitoring Plan;
- e) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), as specified in 40 CFR Part 109 describing measures to prevent and contingency plans for potential spills and discharges from materials handling and transportation; and
- f) Notification procedures consistent with Section XV of the CD.

C. **Pre-Design Investigation and Bench/Pilot Study** - SD shall plan and conduct with EPA review and approval Pre-Design Investigation and, if necessary, a Bench/Pilot Study to address data gaps and/or obtain new data. Pre-Design Investigations shall include, but are not limited to, condition of capping areas, extent of contamination in groundwater, soil, soil gas and/or indoor air, or NAPL occurrence. Pre-design bench/pilot studies shall include, but are not limited to, ISCO/SVE bench study, ISCO/SVE pilot implementation, and SVE pilot implementation (described below). SD shall propose any other pre-design investigation activities necessary to assess the area receiving a remedial component, including, but not limited to, investigations to assess lithology, other soil physical parameters, or other groundwater parameters.

SD shall submit the Pre-Design Investigation Work Plan(s) within 120 days after EPA approval of the Final RD Work Plan. SD shall submit the Bench/Pilot Study Work Plan(s) within 30 days after EPA approval of the Pre-Design Investigation Report(s). For any data gaps identified by EPA or SD, with EPA approval, the following shall apply:

- 1. SD shall submit planning documents and reports for investigations necessary to support RD (Design Investigations) and shall perform Pre-Design Investigations as approved by EPA.
- 2. Each Field Investigation (except the capping survey) shall include the following supporting deliverables and a schedule for their execution. These supporting deliverables shall be developed in accordance with the sections referenced below.

- a) Field Investigation Work Plan(s), including:

- (1) Field Sampling Plan - SD shall prepare and submit for EPA review and approval a Field Sampling Plan. The FSP shall supplement the QAPP, address all sample collection activities, and present planned data evaluation and risk analysis approaches. The FSP shall be developed in accordance with all applicable guidance and policy (see Section VIII of this SOW). The FSP shall be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. The FSP shall describe:

- (a) Sampling objectives;
- (b) Analytical parameters, analytical methods, and holding times;
- (c) Sampling locations and frequencies, sampling procedures and equipment;
- (d) Sample preservation, sample packing, QA/QC samples;
- (e) Sample paperwork and chain-of-custody procedures, sample handling and shipping;
- (f) Management of investigation-derived wastes;
- (g) Planned uses of the data, including data evaluation approach and any risk analysis approach planned;
- (h) The sampling and data collection methods that will be used; and
- (i) A schedule for activities that must be completed in advance of sampling, including acquisition of property, access agreements, and arrangements for disposal of investigation-derived waste.

(2) Quality Assurance Project Plan (QAPP) - SD shall prepare and submit for EPA review and approval a QAPP. The QAPP shall be prepared consistent with the applicable guidance found in Section VIII of this SOW. The QAPP shall address all QA/QC requirements for the sampling efforts to which they apply. The QAPP shall cover sample analysis and data handling for all samples collected. The QAPP shall be consistent with the requirements of the EPA Contract Lab Program (CLP) for laboratories proposed outside the CLP.

(3) Pre-Design Investigation Health and Safety Plan – if not covered in existing HASP previously approved for the RD.

b) Pre-Design Investigation Report(s), which includes:

- (1) Narrative summary of the investigations performed;
- (2) Narrative summary of results;

- (3) Narrative interpretation of data, area-specific risk analysis results, and any other lines of evidence pertinent to the remedial areas;
- (4) Resultant design parameters and criteria;
- (5) Conclusions and recommendations for RD;
- (6) Summary of validated data (i.e., tables and graphics);
- (7) Data validation reports and laboratory data reports;
- (8) Results of any statistical and modeling analyses, risk analysis, comparison of data/modeling results to Action Levels or Clean-up Goals being targeted, and any other lines of evidence to be used in support of defining extent of remediation;
- (9) Copies of field notes and log books; and
- (10) Photographs documenting the work conducted.

3. Cap Survey Plan – The capping survey plan shall include a description of the survey objectives and evaluation criteria.

4. Bench/Pilot Study(ies) - If EPA determines that one or more Bench/Pilot Studies are required to provide information necessary to implement the RA (including a phased approach to RA implementation), then the Bench/Pilot Study component of the RD shall include, as applicable, the items below, and a schedule for their execution:

- a) Bench/Pilot Study Work Plan(s), including:
  - (1) Bench/Pilot Study Sampling and Analysis Plan(s), which shall comply with the same requirements as for the FSP described in Part (2)(a)(1) above;
  - (2) Quality Assurance Project Plan, which shall comply with the same requirements as for the QAPP described in Part (2)(a)(2) above; and
  - (3) Bench/Pilot Study Health and Safety Plan – if not covered in existing HASP previously approved for the RD; and
- b) Bench/Pilot Study Evaluation Report(s), which includes:
  - (1) Narrative summary of the investigations performed;

- (2) Narrative summary of results;
- (3) Narrative interpretation of data and results;
- (4) Resultant design parameters and criteria;
- (5) Conclusions and recommendations for RD including, as applicable, whether remedial approach appears to be effective and potentially capable of achieving ROD Clean-up Goals targeted;
- (6) Summary of validated data (i.e., tables and graphics);
- (7) Data validation reports and laboratory data reports;
- (8) Results of any statistical and modeling analyses;
- (9) Copies of field notes and log books; and
- (10) Photographs documenting the work conducted.

**D. Institutional Controls Implementation and Assurance Plan (ICIAP)** - SD shall prepare and submit the ICIAP for EPA review and approval within 60 days of EPA approval of the Final RD Work Plan. The ICIAP shall describe plans to implement and maintain the Institutional Controls (ICs) at the Site. Each deliverable prepared and submitted pursuant to the ICIAP (i.e. draft versions of the tools, map and legal descriptions) shall be reviewed and approved by EPA. The ICIAP shall include:

- 1. A description of all previously implemented ICs and ICs selected by the OU1 ROD. This description shall include:
  - a) A description of the restrictions of each IC;
  - b) A map and legal description of the boundaries of the areas covered by the restrictive covenant ICs, which conform to the following requirements:
    - (1) All legal descriptions shall be prepared according to current ALTA Survey guidelines and certified by a licensed surveyor.
    - (2) All maps and GIS information shall include, for the areas described, boundaries of the areas, property ownership, streets, easements, assessor parcel numbers and other recorded plot or survey information.

- (3) GIS coordinates must be formatted into an ESRI polygon shape file and the UTM zone must be identified. The shape file shall be projected into the UTM, NAD 83 projection system. Each shape file shall include an attribute name for each polygon submitted (e.g., "site boundary," "residential use prohibited," "landfill cap" and "groundwater use prohibited").
  - (4) The map and legal descriptions shall be added as an addendum to the ICIAP. It shall be delivered within the later of the date of the ICIAP submission or 180 days after EPA's notice to proceed with the RD.
- c) A demonstration that the ICs address all land/resource use restrictions selected in the ROD and encompass all areas that require restrictions during and after implementation of the Remedial Action. The demonstration shall include a comparison (i.e., an overlay of maps) of the areas where restricted use is required by the ROD and the areas addressed by the ICs.
2. Information ICs – a description of all informational ICs including specific plans and schedules for their implementation.
3. Building Permit Review - a description of the Permit Review IC including the identity of the governmental entity, agency or department(s) involved in the IC, a copy of the work plan establishing the review process, and a description of and map showing the boundaries of the IC.
4. General Plan Footnote - the plan for implementation of the General Plan Footnote IC shall include:
  - a) The identity of the governmental entity, agency or department with authority to implement, maintain, and/or enforce the IC, including contact information for person(s) responsible for implementing such control.
  - b) A description of and map showing the boundaries of the IC.
5. Restrictive Covenants – the restrictive covenant discussion shall include:
  - a) A description of the proprietary controls for all applicable areas including, but not limited to, those areas described in Section III(A)(4) of this SOW;

- b) A description of the restricted areas including maps and GIS information, and a plan for developing legal descriptions and final survey maps;
- c) A description of the residual concentrations of COCs likely to remain in the restricted areas after implementation of RA, a description of the pathways for exposure to such material, and a description of the containment, treatment and/or monitoring systems located in such areas;
- d) A plan for submitting draft and final restrictive covenants;
- e) Evaluation of the need for, and if appropriate, a plan and schedule for, obtaining the release or subordination of prior liens and encumbrances for each property affected by the restrictive covenants, as described in Section III.A.4.d of this SOW; and a plan and schedule for obtaining current title insurance commitments or other evidence of title acceptable to EPA demonstrating that title to the property is free and clear of all such liens and encumbrances. The title commitment shall be from a title company and shall be in the form of ALTA Commitment form -1982 (as amended); and
- f) A schedule for execution and recordation of the restrictive covenants with the Los Angeles County Recorder's Office and a schedule for SD to provide EPA and DTSC each with a certified copy of the original recorded restrictive covenants showing the clerk's recording stamps.

6. A description of plans for monitoring, maintaining, reporting on, and ensuring the continued efficacy of the ICs.

- a) Monitoring to determine compliance with and efficacy of the ICs shall include:
  - (1) Annual inspections of the areas affected by the ICs;
  - (2) Communication with owners, lessees (as appropriate) and other holders of properties affected by ICs;
  - (3) Communication with government officials regarding compliance with implemented ICs; and
  - (4) Review of any planned future uses of the affected property to determine whether such uses are consistent with the ICs.

b) The ICIAP shall include a plan for annual reports regarding monitoring of, compliance with, and efficacy of the ICs, and a schedule for submitting the annual reports. The annual reports shall include:

- (1) Descriptions of the monitoring conducted during the reporting period;
- (2) Certifications by SD that the ICs remain in place and are effective;
- (3) Documentation of any noncompliance and any resulting enforcement and corrective action;
- (4) Update of the title commitment, at least once every five years, to identify all current ownership interests; and
- (5) Any recommendations for reducing and/or removing ICs .

**E. Preliminary (30%) Design** - SD shall submit, for comment only, a Preliminary Design when the design effort is approximately 30% complete, within 120 days after later of EPA approval of the Final RD Work Plan, Pilot Study Report(s), or the completion of additional characterization activities. The Preliminary Design submittal shall include the following elements:

1. Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for any treatment train, and expected removal or treatment efficiencies for both the process and waste (concentration and volume);
2. Preliminary plans, drawings, and sketches, including design calculations;
3. Outline of required specifications;
4. Results of treatability studies and additional field sampling;
5. Proposed clean-up verification methods, including compliance with ARARs;
6. Permit requirements;
7. Access necessary to implement the RA;
8. Expected long-term monitoring and operation requirements;
9. Project Delivery Strategy;

10. A Green Remediation/Sustainability Plan that describes how the RA will be performed in accordance with EPA's Superfund Green Remediation Strategy;
11. Preliminary construction schedule, including a schedule for permit requirements;
12. Value Engineering Screen or Study - SD shall have the option of conducting Value Engineering (VE) screenings and studies. Results of any VE screening and studies will be submitted to EPA for review and approval; and
13. Draft Procurement Plan that describes SD's contracting strategy.

**F. Pre-Final (95%) Design**

1. SD shall submit the Pre-final Design when the design effort is 95% complete, within 120 days after receipt of EPA comments on the Preliminary Design. It shall be a continuation and expansion of the Preliminary Design and shall address EPA's comments regarding the Preliminary Design. The Pre-final Design shall serve as the Final Design if EPA has no further comments and EPA issues approval of the Pre-Final Design.
2. The Pre-final Design shall include those elements required for the Preliminary Design and the elements listed below, required for the Final Design.
  - a) Final plans/drawings (further described in Part 3 below);
  - b) Final specifications, including a Table of Contents, as necessary. The specifications shall be reproducible, suitable for bid advertisement, and follow the Construction Specifications Institute master format;
  - c) Survey work necessary for securing property easements or licenses and design completion;
  - d) A final engineer's construction and operation and maintenance cost estimate. This cost estimate shall update the Feasibility Study cost estimate to reflect the detail presented in the Final Design;
  - e) A proposed project schedule for the construction and implementation of the RA, including timing and specific dates for initiation and completion of all critical path tasks, major milestones, and completion of the project.
  - f) A preliminary schedule for operation and monitoring activities;
  - g) A method for selection of the construction contractor(s);

- h) A plan for implementation of construction and construction oversight;
- i) A technical specification for photographic documentation of the remedial construction work;
- j) A discussion of the manner in which the RA will achieve the Performance Standards;
- k) A description of those efforts made to secure access, institutional controls, and any other approval needed from property owners or tenants, and the results of those efforts (see Section III(A) above). Legal descriptions of any property or easements or licenses to be acquired shall be provided; and
- l) Pre-Final RD documents shall be certified by a Professional Engineer registered in the State of California.

3. The final engineering plans/drawings shall represent an accurate identification of known existing Site conditions and an illustration of the work proposed. Drawings shall represent, as necessary, all proposed equipment, improvements, details and other construction and installation items to be developed in accordance with the current standards and guidelines of the State of California. Drawings shall be submitted in both standard size, approximately 24" x 36," and half size. A list of drawing sheet titles shall be provided. Drawings shall be reproducible and suitable for bid advertisement. Typical items to be provided on such drawings include, at a minimum, the following:

- a) Title sheet including at least the title of the project, a key map, the name of the designer, date prepared, and sheet index;
- b) Name and address of owners of record for all properties within 200 feet of the Site;
- c) A Site survey including the distance and bearing of all property lines that identify and define the project Site;
- d) All recorded easements, licenses, right-of-ways, and reservations;
- e) All wells, facilities, and equipment to be constructed or installed as part of RA, if any;
- f) A topographic survey, including existing and proposed contours and spot elevations for all areas that will be affected by the remedial activities, based on U.S. Coast and Geodetic Survey data;

- g) All utilities, existing (on file with the local municipality and as identified under the available dig alert notification systems) and proposed;
- h) Location and delineation of all significant natural features including, inter alia, wooded areas, water courses, wetlands and depressions;
- i) Flood hazard data and 100-year and 500-year flood plain delineation;
- j) North arrow, scale, sheet numbers and the person responsible for preparing each sheet;
- k) Decontamination areas, staging areas, borrow areas and stockpiling areas;
- l) Miscellaneous appropriate detail sheets;
- m) Definitions of all symbols and abbreviations;
- n) A specification for a sign at RA work areas at the Site. The sign should describe the project, the name of the main contractor performing the RA work, state that the project is being performed under EPA oversight, and provide an EPA contact for further information;
- o) Site security measures for areas of active RA construction/operation;
- p) Roadways; and
- q) Electrical, mechanical, and/or structural plans for RA work, as required.

**G. Final (100%) Design** - If the Pre-Final Design is not approved by EPA, SD shall address EPA's comments regarding the Pre-Final Design and re-submit as the Final Design within 60 days after receipt of EPA comments on the Pre-final Design. The Final Design submittals shall include final versions of the Pre-Final Design as well as the following:

1. A draft Operation and Maintenance Plan (O&M Plan), described in Part I below; and
2. A draft Construction Quality Assurance Plan (CQAP), described in Part J below.

If the Pre-Final Design is approved by EPA, SD shall submit within 120 days after receipt of EPA approval, the draft O&M Plan and draft CQAP.

**H. Draft Operation and Maintenance Plan (O&M Plan)** - The draft O&M Plan shall describe long-term operation and maintenance of the Remedial Action and shall include all elements of the Site Wide Management Plan (SWMP), as described in Section VI(B). The draft O&M Plan shall be prepared in accordance with all applicable guidance, as noted in Section VIII of this SOW. Note: the schedule for the development of the Final O&M Plan shall be described in the RA Work Plan (see Section VI(A)). The draft O&M Plan shall include the following elements:

1. Description of and schedule for each operation task and maintenance task;
2. Description of and schedule for periodic inspections of equipment and components;
3. Description of instrumentation and equipment monitoring;
4. Example checklists and descriptions of periodic reports;
5. Health and Safety Requirements, including, descriptions of precautions, necessary equipment, etc., for site personnel; and safety tasks required in event of systems failure;
6. Description and analysis of potential operating problems, including common and/or anticipated remedies;
7. Description of routine monitoring, data collection and laboratory testing; schedule and procedures for monitoring; anticipated interpretation of the data;
8. A Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for any field sampling required as part of the routine monitoring, data collection and laboratory testing. The required components of an FSP and QAPP are described in Section V(C)(2)(a);
9. Description of monitoring equipment and monitoring components, including identifying information, maintenance requirements and schedule, and replacement requirements and schedule;
10. Description of alternative operations and maintenance in case of systems failure, including:
  - a) Alternative procedures to prevent release or threatened releases of Waste Material which may endanger public health and the environment or exceed Performance Standards;

b) Analysis of vulnerability and additional resource requirements should a failure occur; and,

c) Notification and reporting requirements should O&M systems fail or be in danger of imminent failure;

11. Description of corrective action (if appropriate) to be implemented in the event that clean-up or performance standards are exceeded; and a schedule for implementing these corrective actions;

12. Description of records and reports, including daily operating logs, laboratory records, reports regarding emergencies, personnel and maintenance records; and monthly and annual reports to State agencies; and

13. If clean-up or performance standards are exceeded despite the proper operation of the remedial system in accordance with the design, the PMEP will present approaches for evaluation of achievement of asymptotic conditions, for estimating the best potential performance of the selected technology under site conditions and recommendations regarding shutdown/continued operation of the remedial system, for EPA approval.

**I. Draft Construction Quality Assurance Plan (CQAP)** - The CQAP shall detail the quality assurance program during construction activities, to ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The Final CQAP shall be submitted as specified by the RA Work Plan (see Section VI(A)). The CQAP shall address sampling, analysis, and monitoring to be performed during the remedial construction phase of the Work. Quality assurance items to be addressed include, at a minimum, the following:

1. Identification of a quality assurance official (QA Official) independent of the RA Contractor to conduct a quality assurance program during the remedial action phase of the project;

2. Qualifications of the Quality Assurance Official to demonstrate he or she possesses the training and experience necessary to fulfill his or her identified responsibilities;

3. Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the RA;

4. Specific construction quality assurance systems (e.g., USACE) to be used, if any;

5. Monitoring, measurement, sampling, testing and daily logging to establish whether the RA construction is performed in compliance with design specifications, ARARs, and performance standards. This shall include identification of the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation;
6. Protocols for monitoring, measurement, sampling and testing;
7. Inspection and certification of the Work;
8. A detailed description of reporting requirements for CQAP activities. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation; and
9. Post-construction drawings.

## VI. REMEDIAL ACTION

In accordance with the Schedule in Section VII of this SOW, SD shall notify EPA in writing of the name, title, and qualifications of any construction contractor proposed to be used in carrying out the RA under the Consent Decree. With respect to any proposed construction contractor, SD shall demonstrate that the proposed construction contractor has a quality system that complies with ANSI (see Section VIII), by submitting a copy of the proposed construction contractor's Quality Management Plan (QMP) within 45 days after EPA approval of the Final Design. The QMP should be prepared in accordance with applicable guidance (see Section VIII), or equivalent documentation as determined by EPA. If EPA disapproves of the selection of any contractor as the construction contractor, SD shall submit replacement contractors that would be acceptable to EPA within 30 days after receipt of EPA's disapproval of the contractor previously selected. EPA shall thereafter provide written notice of the name(s) of the contractor(s) it approves, if any. If at any time SD proposes to change the construction contractor, SD shall notify EPA and shall obtain approval from EPA as provided in this paragraph, before the new construction contractor performs any work under the Consent Decree.

SD shall perform the tasks set forth below. SD shall perform the RA to meet all objectives of the RA, the CD, this SOW, and all performance standards.

**A. Remedial Action Work Plan** - In accordance with the Schedule in Section VII of this SOW, SD shall submit an RA Work Plan for remedial action activities within 120 days after EPA approval of the Final Design. The RA Work Plan shall comply with relevant EPA

guidance (see Section VIII of this SOW), and shall conform to EPA's September 30, 2011 Record of Decision (the ROD) and the approved RD.

1. The RA Work Plan shall include, at a minimum, the following items:
  - a) Identity of, contact information for, and description of the roles of the members of SD's RA project team, including the Project Coordinator, QA Official, Supervising Contractor and RA Contractor;
  - b) Method of selection of contractor;
  - c) Schedule for completion of the RA, including a schedule for implementing all RA tasks identified in the approved Final Design;
  - d) Methods for satisfying permitting requirements, including obtaining permits for off-Site activity and satisfying ARARs requirements;
  - e) Methods for finalizing access agreements;
  - f) Procedures for SD request and EPA review of any proposed RD changes needed during performance of RA; and
  - g) Proposed communication schedule and plans for involvement with EPA and other stakeholders, and periodic meetings.
2. The RA Work Plan shall also include a discussion of, and schedule for, submittal of the following deliverables (described in detail in Section IV(B) and the remainder of this section):
  - a) Progress Reports;
  - b) Site-Wide Management Plan (SWMP);
  - c) Health and Safety Plan/Contingency Plan (HASP/CP);
  - d) Final Operation and Maintenance Plan (O&M Plan);
  - e) Performance Monitoring and Evaluation Plan (PMEP);
  - f) Waste Transportation and Off-Site Disposal Plan; and
  - g) Final Construction Quality Assurance Plan (CQAP).
3. The RA Work Plan shall include an excavation work plan for future areas of contamination encountered during redevelopment or construction to address the remedial action component in Section III, Part H of this SOW. The excavation work plan shall be generic in nature and be able to apply to any excavation

needed for such future areas of contamination encountered. It shall include, but not be limited to, descriptions of the following types of activities:

- a) investigation
- b) monitoring
- c) excavation
- d) waste categorization
- e) disposal (including compliance with the Off-Site Rule (42 U.S.C. § 9621(d)(3), 40 C.F.R. Part 300.440))

In addressing future areas of contamination pursuant to Section III, Part H of this SOW, if EPA determines that work other than excavation is needed then SDs shall prepare an addendum to the RA Work Plan that describes the work.

The RA Work Plan shall also define the required contents of the technical memoranda that shall be prepared upon completion of each future area response action.

**B. Site-Wide Management Plan (SWMP)** - SD shall submit a Site-Wide Management Plan within 60 days after EPA approval of the RA Work Plan, including:

- 1. A description of site security needs and provisions;
- 2. A description of the constraints and parameters imposed on the project by outside entities, including property owners, operating businesses, local agencies, etc., and a plan for accommodating these constraints in the implementation of the RA; and
- 3. SD shall update the SWMP following construction of the remedy to describe requirements and plans during long-term operation and monitoring.

**C. Health and Safety Plan/Contingency Plan (HASP/CP)** - SD shall submit a HASP/CP within 60 days after EPA approval of the RA Work Plan, that describes all efforts to be made to protect on-site personnel and area residents from physical, chemical and all other hazards posed by this RA. The CP shall describe procedures to be used in the event of an accident or emergency at the Site. The HASP/CP shall meet the requirements specified in Section V(B).

**D. Final Operation and Maintenance Plan (O&M Plan)** - SD shall submit a Final O&M Plan according to the schedule specified in the EPA-approved RA Work Plan, that

updates the Draft O&M Plan, submitted pursuant to Section V(I), based on information developed during the RA planning stage.

**E. Performance Monitoring and Evaluation Plan (PMEP)** - SD shall submit a Performance Monitoring and Evaluation Plan (PMEP) according to the schedule specified in the approved RA Work Plan. The purpose of the PMEP is to describe how the Performance Standards for the RA will be measured and evaluated. The PMEP shall include the following elements:

1. A description of each of the Performance Standards required by the ROD;
2. A description of how each of the Performance Standards will be met; and
3. A description of how ongoing achievement of the Performance Standards will be measured and reported. An FSP and QAPP shall be included for any environmental sampling required.

**F. Waste Transportation and Off-Site Disposal Plan** - SD shall submit a Waste Transportation and Off-Site Disposal Plan according to the schedule specified in the approved RA Work Plan.

**G. Final Construction Quality Assurance Project Plan (CQAP)** - SD shall submit a Final CQAP according to the schedule specified in the approved RA Work Plan, which shall be an update of the Draft CQAP submitted pursuant to Section V(J), based on information developed during the RA planning stage.

**H. Implementation** – SD shall implement the RA in accordance with the approved Final RD, the approved Final RA Work Plan, and the other approved plans described herein.

**I. Reports, Meetings and Oversight**

1. Preconstruction Meeting – SD shall hold a preconstruction meeting with EPA and others as directed or approved by EPA, after EPA approval of the Proposed Construction Contractor and before the start of construction. During this meeting, EPA shall review methods for documenting and reporting data, review methods for distributing and storing documents and reports, and review work area security and safety plans. SD shall prepare minutes of the preconstruction meeting, which shall be sent to all parties in attendance at the meeting.
2. Periodic Meetings - During the construction phase, SD shall communicate (i.e., in person, telephone calls, and/or electronically) weekly with EPA, and others as directed or approved by EPA, to discuss construction issues. The construction phase is defined as the period during which work is being conducted in the field to build the remedial systems. Agenda and attendees will

be specified to EPA prior to the meetings. SD shall prepare minutes of the meetings which shall be sent to all parties in attendance at the meeting within 5 days of the meeting.

3. Periodic Inspections

a) SD shall provide access to EPA during any and all periodic inspections and shall, as much as practicable, accompany EPA during these inspections.

b) Any deficiencies in construction or construction not in substantial compliance with the approved Final Design, RD change notices, and the approved final RA Work Plan will be noted during periodic inspections. Upon notification by EPA of any deficiencies in construction or construction not in substantial compliance with the approved Final Design, any approved change notices, and/or the approved RA Work Plan, SD shall take all necessary steps to correct the deficiencies and/or bring the construction into compliance with the approved Final Design, any approved design changes, and/or the approved RA Work Plan.

**J. Completion of Construction**

1. Pre-final Construction Inspection - Within 30 days after SD concludes that construction is complete for a treatment area-specific component of the RA (as defined in the CD Section XIV), SD shall schedule and conduct a pre-certification inspection to be attended by SD, EPA and DTSC. The purpose of the inspection is to determine whether the construction of the component is complete and complies with the final remedial design and the approved RA Work Plan. This inspection shall involve SD, EPA, DTSC, and contractors. The pre-final inspection shall include a walkthrough inspection of the facilities constructed for that component of the RA. SD shall certify that the equipment performs to meet the purpose and intent of the specifications. EPA shall identify and note any outstanding construction and/or operation items found during the inspection.

2. Pre-final Construction Inspection Report - SD shall submit, after each Pre-final Construction Inspection, a Pre-final Construction Inspection Report for that component of the RA within 30 days after completion of a Pre-final Construction Inspection for that component. This report shall describe all outstanding construction and/or operation items, all actions required to resolve these items, the proposed completion date for these items, and a proposed date for the final inspection.

3. Final Construction Inspection - SD will schedule and conduct, with EPA's approval, a final construction inspection for each component of the RA, within 30 days after completion of work identified in the Pre-final Construction

inspection Report. This inspection shall include another walkthrough of the facilities constructed as part of that component. SD and the RPM shall use the Pre-final Construction Inspection Report as a checklist during this inspection.

4. Remedial Action Report(s). Within 120 days after a treatment area-specific component of the RA has been fully performed and the applicable Performance Standards have been achieved, SD shall submit a written Treatment Area-Specific Remedial Action Report.

The reports shall meet the requirements specified in the CD Section XIV and comply with EPA guidance "Close Out Procedures for NPL Sites" (see Section VIII of this SOW).

5. Operational & Functional Determination - After SD concludes that each containment portion of the RA is operational and functional, SD shall notify EPA in writing within 30 days. If, after conducting any additional inspections which EPA determines are necessary, EPA agrees that the component of the RA is operational and functional, EPA shall notify SD in writing (O&F Determination). If EPA determines that the RA is not operational and functional, EPA shall notify SD of the activities that must be undertaken for the RA to attain operational and functional status and SDs shall undertake all activities described in the notice, in accordance with the schedules and specifications established therein.

6. Upon completion of construction and completion of a period of operation sufficient to establish that each component of the RA is operational and functional, as determined by EPA, SD shall submit any updates to the Final O&M Plan, SWMP, and PMEP deemed appropriate by EPA, within 90 days of EPA approval of the O&F notification. SD shall operate and maintain the components of the RA in accordance with the approved O&M Plan.

**K. Community Involvement** - If and when requested by EPA, SD shall participate in community involvement activities pursuant to the community involvement plan developed by EPA. This support shall be at the request of EPA and may include, but is not limited to: preparation of information regarding the Work to be shared with the public, dissemination of information regarding the Work to the public through mailings, public meetings or other avenues, and logistical and technical support for public meetings held or sponsored by EPA to explain activities at or relating to OU1.

## VII. SCHEDULE FOR DELIVERABLES AND MILESTONES

Reference CD/SOW Section	Major Deliverable	Due Date
CD Sec VI(9)(a)	Notification of and Quality Management Plan for proposed Supervising Contractor	10 <sup>th</sup> day following lodging of CD
CD Sec X(28)	Progress Reports <sup>1</sup>	10 <sup>th</sup> day of every reporting period <sup>2</sup> following lodging of CD
SOW Sec V(A)	Remedial Design Work Plan	90 days after Notice of Authorization to proceed with RD
SOW Sec V(B)(1)	Health and Safety Plan/Contingency Plan	30 days after EPA approval of Final RD Work Plan
SOW Sec V(C)	Pre-Design Investigation Work Plan(s)	120 days after EPA approval of Final RD Work Plan
	Bench/Pilot Study Work Plan(s)	30 days after EPA approval of Pre-Design Investigation Report
SOW Sec V(C)(2)(b)	Pre-Design Investigation Report(s)	According to schedule specified in approved RD Work Plan
SOW Sec V(C)(4)(b)	Bench Study Evaluation Report	According to schedule specified in approved RD Work Plan
	Pilot Study Evaluation Report	
SOW Sec V(D)	Institutional Controls Implementation and Assurance Plan	60 days after EPA approval of Final RD Work Plan

<sup>1</sup> Only electronic submission is required (no paper).

<sup>2</sup> Reporting periods are defined in Paragraph 28 of the Consent Decree as “monthly (or less frequently if agreed to by the parties) while design or construction activities are occurring, or quarterly (or less frequently if agreed to by the parties) during other periods of work.”

SOW Sec V(D)(5)(d)	Draft and final restrictive covenants	According to schedule specified in Institutional Controls Implementation and Assurance Plan
SOW Sec V(D)(5)(e)	Release or subordination of prior liens and encumbrances; current title insurance commitments or other evidence of title	According to schedule specified in Institutional Controls Implementation and Assurance Plan as appropriate
SOW Sec V(D)(5)(f)	Execution and Recordation of the Restrictive Covenants  certified copy of the original recorded restrictive covenants showing clerk's recording stamps	According to schedule specified in Institutional Controls Implementation and Assurance Plan
SOW Sec (V)(D)(6)(b)	Annual reports regarding monitoring of, compliance with, and efficacy of the ICs	According to schedule specified in Institutional Controls Implementation and Assurance Plan
SOW Sec V(E)	Preliminary Design (30%)	120 days after the latter of EPA approval of Final RD Work Plan , Pilot Study Report(s), or completion of additional characterization activities
SOW Sec V(F)	Pre-final Design (95%)	120 days after receipt of EPA comments on the Preliminary Design
SOW Sec V(G)	Final Design (100%)	60 days after receipt of EPA comments on the Pre-final Design
SOW Sec V(H)	Draft Operation and Maintenance Plan	As described in the 120 days after receipt of EPA approval of Pre-Final Design or Final Design (the later of)
SOW Sec V(I)	Draft Construction Quality Assurance Plan	120 days after receipt of EPA approval of Pre-Final Design or Final Design (the later of)
SOW Sec VI(A)	Remedial Action Work Plan	120 days after EPA approval of Final Design

SOW Sec VI	Notification of and Quality Management Plan for Proposed Construction Contractor	45 days after EPA approval of Final Design
SOW Sec VI(B)	Site-Wide Management Plan	60 days after EPA approval of RA Work Plan
SOW Sec VI(C)	Health and Safety Plan/Contingency Plan	60 days after EPA approval of RA Work Plan
SOW Sec VI(D)	Final Operation and Maintenance Plan	As specified in approved RA Work Plan
SOW Sec VI(E)	Performance Monitoring and Evaluation Plan	As specified in approved RA Work Plan
SOW Sec VI(F)	Waste Transportation and Off-Site Disposal Plan	As specified in approved RA Work Plan
SOW Sec VI(G)	Final Construction Quality Assurance Project Plan	As specified in approved RA Work Plan
SOW Sec VI(I)(1)	Preconstruction Meeting	After EPA approval of Proposed Construction Contractor and before start of construction
SOW Sec VI(I)(2)	Minutes of Periodic Meetings	Within 5 days of the meeting
SOW Sec VI(J)(1)	Pre-final Construction Inspection	30 days after SD concludes that construction is complete for a treatment area specific component of the RD
SOW Sec VI(J)(2)	Pre-final Construction Inspection Report	30 days after completion of a Pre-final Construction Inspection for that component
SOW Sec VI(J)(3)	Final Construction Inspection	30 days after completion of work identified in Pre-final Construction Inspection Report
SOW Sec VI(J)(4)	Remedial Action Report(s)	120 days after a Treatment area specific component of the RA has been fully performed and the applicable performance standards have been achieved.
SOW Sec VI(J)(5)	Operational & Functional Determination	30 days after SD concludes that each containment portion of the RA is operational and functional
SOW Sec VI(J)(6)	Updates to Final O&M Plan, SWMP, and PMEP	Within 90 days of EPA approval of O&F notification

## VIII. REFERENCES/GUIDANCE DOCUMENTS

The following list, although not comprehensive, consists of many of the regulations and guidance documents that apply to the RD/RA process:

- *Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), Parts 1, 2 and 3*, EPA-505-B-04-900A, B and C, March 2005 (see Section V. A. of the Remedial Design SOW).
- *Construction Specifications Institute's Manual of Practice, 1985 edition, available from the Construction Specifications Institute*, 601 Madison Street, Alexandria, Virginia 22314.
- *Greener Clean-ups Policy - EPA REGION 9*, issued September 14, 2009; found at: <http://www.epa.gov/region9/climatechange/green-sites.html>.
- *Superfund Green Remediation Strategy*, September 2010, <http://www.epa.gov/superfund/greenremediation/sf-gr-strategy.pdf>.
- *Superfund Community Involvement Handbook*, U. S. EPA, Office of Solid Waste and Emergency Response, April 2005, EPA-540-K-05-003.
- *EPA Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA QA/G-4, 2006).
- *Guidance on Expediting Remedial Design and Remedial Actions*, EPA/540/G-90/006, August 1990.
- *Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites*, U. S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283. 1-2.
- *Guide to Management of Investigation-Derived Wastes*, U. S. EPA, Office of Solid Waste and Emergency Response, Publication 9345. 3-03FS, January 1992.
- *Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements*, U. S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234. 0-05.
- *Institutional Controls: A Guide to Planning, Implementing, Monitoring and Enforcing Institutional Controls Contaminated Sites*, December 2012, OSWER 9355. 0-89, EPA 540-R-09-001, <http://www.epa.gov/superfund/policy/ic/guide/index.htm>
- *National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule*, Federal Register 40 CFR Part 300, March 8, 1990.

- *Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions*, February 19, 1992, OSWER Directive 9355. 7-03.
- *Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment*, American Society of Civil Engineers, May 1988.
- *Remedial Design/Remedial Action (RD/RA) Handbook*, U. S. EPA, Office of Solid Waste and Emergency Response (OSWER), 9355. 0-04B, EPA 540/R-95/059, June 1995.
- *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations*, U. S. EPA, EPA/240/B-01/003, March 2001, Reissued May 2006.
- *Guidance for Quality Assurance Project Plans*, U. S. EPA, EPA/240/R-02/009, December 2002.
- *Scoping the Remedial Design (Fact Sheet)*, February 1995, OSWER Publ. 9355-5-21 FS.
- *Standards for the Construction Industry*, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.
- *Standards for General Industry*, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
- *Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties*, April 1990, EPA/540/G-90/001.
- *Value Engineering (Fact Sheet)*, U. S. EPA, Office of Solid Waste and Emergency Response, Publication 9355. 5-03FS, May 1990.
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, EPA-540-R-00-006, June 2001.
- *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-08-01, June 2008.
- *American National Standards Practices for Respiratory Protection*. American National Standards Institute Z88. 2-1980, March 11, 1981.
- *A Compendium of Superfund Field Operations Methods, Two Volumes*, USEPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355. 0-14.

- *Data Quality Objectives for Remedial Response Activities*, USEPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335. 0-7B.
- *Engineering Support Branch Standard Operating Procedures and Quality Assurance Plan*, USEPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
- *NIOSH Plan of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II*, National Institute of Occupational Safety and Health.
- *Occupational Safety and Health Guidance Plan for Hazardous Waste Site Activities*, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
- *Superfund Remedial Design and Remedial Action Guidance*, USEPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355. 0-4A.
- *EPA Region IX Sampling and Analysis Plan Guidance and Template* (R9QA/002. 1, April, 2000).
- *Draft: Region 9 Superfund Data Evaluation/Validation Guidance*, USEPA, Quality Assurance Office, R9QA/006. 1, December 2001.
- *Operation and Maintenance in the Superfund Program*, EPA, May 2001, (OSWER 9200. 1-37FS, EPA 540-F-01-004).
- *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (American National Standard, January 5, 1995), ANSI/ASQC E4-1994.
- *EPA Requirements for Quality Management Plans (QA/R-2)*, EPA/240/B-01/002, March 2001, reissued May 2006.
- *EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis* (EPA QA/G-9, 1998).
- *Close Out Procedures for National Priorities List Sites*, EPA, May 2011 (OSWER Directive 9320.2-22).